

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of the Claims

1. (Currently amended) A connector assembly for use in making an anastomotic connection between an opening prepared at an end of a graft tissue conduit and an aperture in a side wall of a body tissue conduit in a patient comprising:

a body disposed annularly about a longitudinal axis and having axially spaced distal and proximal portions, the distal portion having a graft retention component to secure the tissue of the graft tissue conduit about the opening to the connector assembly and a hinge joint, and the proximal portion having a plurality of annularly spaced body fingers that expand radially out to engage the interior surface of the side wall of the body tissue conduit about the aperture; and

an outside-retention element configured to annularly engage the exterior surface of the graft tissue conduit about the opening, wherein the outside-retention element is hingedly coupled to the distal portion of the body by the interaction of hinge eyelets of the outside-retention element with the hinge joint.

2. (Original) The connector assembly defined in claim 1, wherein the graft retention component comprises an annular inside-retention element configured to engage the interior surface of the graft tissue conduit about the opening.

3. (Original) The connector assembly defined in claim 2, wherein the annular inside-retention element has a

cross-sectional area larger than the cross-sectional area of the graft tissue conduit.

4. (Original) The connector assembly defined in claim 2, wherein the annular inside-retention element is unitary with the distal portion of the body.

5. (Original) The connector assembly defined in claim 2, wherein the annular inside-retention element is coupled to the distal portion of the body.

6. (Original) The connector assembly defined in claim 2, wherein the annular inside-retention element includes a plurality of annularly spaced inside-retention members that have free ends configured to engage the interior surface of the graft tissue conduit about the opening.

7. (Canceled).

8. (Previously presented) The connector assembly defined in claim 1, wherein the outside-retention element comprises a plurality of annularly spaced outside-retention members.

9. (Canceled).

10. (Previously presented) The connector assembly defined in claim 1, wherein the outside-retention element is rigidly connected to the distal portion of the body.

11. (Previously presented) The connector assembly defined in claim 1, wherein the outside-retention element is slidably coupled to the distal portion of the body.

12. (Previously presented) The connector assembly defined in claim 1, wherein the outside-retention element is further configured to engage the exterior surface of the body tissue conduit about the opening.

13. (Previously presented) The connector assembly defined in claim 6, wherein the outside-retention element is configured to be at least partially proximal to the plurality of inside-retention members.

14. (Previously presented) The connector assembly defined in claim 1, wherein the outside-retention element is configured to be at least partially in the same plane as the inside-retention element.

15. (Previously presented) The connector assembly defined in claim 1, wherein the outside-retention element is a substantially annular expandable band configured to pass annularly about the plurality of inside-retention members from a first position distal to the plurality of inside-retention members to a second position at least partially proximal to the plurality of inside-retention members.

16. (Original) The connector assembly defined in claim 15, wherein the connector assembly further comprises a collar configured to prevent the band from expanding when in said second position.

17. (Original) The connector assembly defined in claim 1, wherein the radially outward expansion of the plurality of annularly spaced body fingers is an elastic bending.

18. (Original) The connector assembly defined in claim 1, wherein the body has a medial portion between the proximal portion and the distal portion, wherein the medial portion includes at least one torsional element.

19. (Original) The connector assembly defined in claim 1, wherein the opening is prepared by a length-wise axial incision from a toe point at the end of the graft tissue conduit to a heel point along the length of the graft tissue conduit.

20. (Original) The connector assembly defined in claim 1, wherein the opening is prepared by an incision oblique to the longitudinal axis of the graft tissue conduit from a toe point at the end of the graft tissue conduit to a first point along the length of the graft tissue conduit followed by a length-wise axial incision from the first point to a heel point further along the length of the graft tissue conduit.

21-34. (Cancelled)

35. (Previously presented) Apparatus for producing the anastomotic connection between the opening prepared at the end of the graft tissue conduit and the aperture in the side wall of the body tissue conduit in the patient comprising:

the connector assembly defined in claim 1; and  
a delivery tool having a first configuration and a second configuration, wherein the first configuration is configured for deforming the proximal portion of the connector assembly from an expanded configuration to a deformed configuration and to advance the deformed proximal portion of the connector assembly into the lumen of the body tissue conduit via the aperture, and wherein the second configuration

is configured for un-deforming the proximal portion of the connector assembly in the lumen of the body tissue conduit.

36. (Previously presented) The apparatus defined in claim 37, wherein the loading tool is external to a cannulation of the connector assembly.

37. (Previously presented) The apparatus defined in claim 35 further comprising a loading tool having a body portion, wherein the body portion is configured to support the distal portion of the connector assembly and to define the resulting shape of the anastomotic connection external to the body tissue conduit.

38. (Previously presented) The apparatus defined in claim 37, wherein the loading tool further comprises at least one tissue holder configured to engage the exterior surface of the graft tissue conduit about the opening and to hold the graft tissue conduit about the graft retention component of the connector assembly.

39. (Previously presented) The apparatus defined in claim 35, wherein the graft retention component comprises an annular inside-retention element configured to engage the interior surface of the graft tissue conduit about the opening.

40. (Previously presented) The apparatus defined in claim 37, wherein the annular inside-retention element has a cross-sectional area larger than the cross-sectional area of the graft tissue conduit.